

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1-24. (Cancelled)

25. (Currently amended) A soluble recombinant botulinum toxin comprising ~~a soluble C-terminal portion of a botulinum toxin heavy chain, an N-terminal portion of a botulinum toxin heavy chain and a botulinum toxin light chain wherein the C-terminal portion comprises~~ SEQ ID NO: 23 a non-toxin protein sequence and a receptor binding domain amino acid sequence of a botulinum toxin.

26. (Currently amended) The recombinant toxin of claim 25, wherein the receptor binding domain amino acid sequence comprises the receptor binding domain of a botulinum toxin selected from the group consisting of botulinum toxin serotypes A, B, C<sub>1</sub>, D, E, F, and G ~~further comprising a non-toxin protein sequence.~~

27. (Currently amended) The recombinant toxin of claim 25 wherein the receptor binding domain amino acid sequence comprises an amino acid sequence selected from the group consisting of amino residues 861-1296 of SEQ ID NO:28; amino acid residues 848-1291 of SEQ ID NO: 40; amino acid residues 856-1291 of SEQ ID NO: 60; amino acid residues 852-1276 of SEQ ID NO: 66; amino acid residues 835-1250 of SEQ ID NO: 50; amino

acid residues 853-1274 of SEQ ID NO: 71; and amino acid residues 853-1297 of SEQ ID NO: 77 ~~the toxin is in a solution.~~

28. (Currently amended) The recombinant botulinum toxin of claim 25 wherein the non-toxin protein sequence is coupled to the receptor binding domain ~~light chain is solubilized.~~

29. (Currently amended) The recombinant toxin of claim 25 wherein the non-toxin protein sequence is an amino acid sequence of a tag selected from the group consisting of a polyhistidine tract, a maltose binding protein, a glutathione-S-transferase, and a protein A C-terminal portion ~~and the N-terminal portion are bonded together.~~

30. (Currently amended) The recombinant toxin of ~~claim 29~~ claim 25 wherein the toxin is substantially endotoxin-free ~~bond is a covalent bond.~~

31. (Currently amended) The recombinant toxin of claim 25 which is soluble in an aqueous environment ~~wherein the light chain is bonded to the C-terminal portion or the N-terminal portion.~~

32. (Currently amended) A soluble recombinant botulinum toxin comprising ~~a soluble C-terminal portion of a botulinum toxin type A heavy chain, an N-terminal portion of a botulinum toxin type A heavy chain and a botulinum toxin type A light chain~~ wherein the C-terminal portion comprises SEQ ID NO: 23 a non-toxin protein sequence, a receptor binding domain amino acid sequence of a botulinum toxin, a translocation domain amino acid

sequence of a botulinum toxin, and a proteolytic domain amino acid sequence of a botulinum toxin.

33. (Currently amended) The recombinant toxin of claim 32 ~~further comprising a non-toxin protein sequence~~ wherein the receptor binding domain amino acid sequence, the translocation domain amino acid sequence, and the proteolytic domain amino acid sequence comprises the receptor binding domain, translocation domain, and proteolytic domain of a botulinum toxin selected from the group consisting of botulinum toxin serotypes A, B, C<sub>1</sub>; D, E, F, and G.

34. (Currently amended) The recombinant toxin of claim 32 wherein the ~~toxin is in a solution~~ non-toxin protein sequence is coupled to the receptor binding domain.

35. (Currently amended) The recombinant botulinum toxin of claim 32 wherein the non-toxin protein sequence is an amino acid sequence of a tag selected from the group consisting of a polyhistidine tract, a maltose binding protein, a glutathione-S-transferase, and a protein A light chain is solubilized.

36. (Currently amended) The recombinant toxin of claim 32 wherein the toxin is substantially endotoxin-free ~~C-terminal portion and the N-terminal portion are bonded together.~~

37. (Currently amended) The recombinant toxin of claim 32 which is soluble in an aqueous environment ~~claim 36 wherein the bond is a covalent bond.~~

38. (Cancelled).